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Sequence Listing was accepted.

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Reviewer: Durreshwar Anjum

Timestamp: [year=2010; month=11; day=30; hr=14; min=36; sec=15; ms=130;
]

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Application No: 10560303 Version No: 3.0

Input Set:**Output Set:**

Started: 2010-11-22 16:47:52.407
Finished: 2010-11-22 16:47:55.821
Elapsed: 0 hr(s) 0 min(s) 3 sec(s) 414 ms
Total Warnings: 88
Total Errors: 0
No. of SeqIDs Defined: 120
Actual SeqID Count: 120

Error code	Error Description
W 402	Undefined organism found in <213> in SEQ ID (1)
W 402	Undefined organism found in <213> in SEQ ID (2)
W 402	Undefined organism found in <213> in SEQ ID (3)
W 402	Undefined organism found in <213> in SEQ ID (4)
W 402	Undefined organism found in <213> in SEQ ID (5)
W 402	Undefined organism found in <213> in SEQ ID (6)
W 402	Undefined organism found in <213> in SEQ ID (7)
W 402	Undefined organism found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 213	Artificial or Unknown found in <213> in SEQ ID (12)
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)
W 213	Artificial or Unknown found in <213> in SEQ ID (18)
W 213	Artificial or Unknown found in <213> in SEQ ID (19)
W 213	Artificial or Unknown found in <213> in SEQ ID (20)

Input Set:

Output Set:

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Total Warnings: 88
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Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (21)
W 213	Artificial or Unknown found in <213> in SEQ ID (22)
W 213	Artificial or Unknown found in <213> in SEQ ID (23)
W 213	Artificial or Unknown found in <213> in SEQ ID (24)
W 213	Artificial or Unknown found in <213> in SEQ ID (25)
W 213	Artificial or Unknown found in <213> in SEQ ID (26)
W 213	Artificial or Unknown found in <213> in SEQ ID (27)
W 213	Artificial or Unknown found in <213> in SEQ ID (28) This error has occurred more than 20 times, will not be displayed
W 402	Undefined organism found in <213> in SEQ ID (39)
W 402	Undefined organism found in <213> in SEQ ID (43)
W 402	Undefined organism found in <213> in SEQ ID (44)
W 402	Undefined organism found in <213> in SEQ ID (46)
W 402	Undefined organism found in <213> in SEQ ID (50)
W 402	Undefined organism found in <213> in SEQ ID (51)
W 402	Undefined organism found in <213> in SEQ ID (54)
W 402	Undefined organism found in <213> in SEQ ID (55)
W 402	Undefined organism found in <213> in SEQ ID (56)
W 402	Undefined organism found in <213> in SEQ ID (59)
W 402	Undefined organism found in <213> in SEQ ID (61)
W 402	Undefined organism found in <213> in SEQ ID (62) This error has occurred more than 20 times, will not be displayed

SEQUENCE LISTING

<110> Inouye, Masayori
Zhang, Junjie
Zhang, Yong Long
Qing, Guoliang
Suzuki, Motoo

<120> mRNA Interferases and Methods of Use Thereof

<130> University of Medicine & Dentistry of New Jersey (601-1-131PCT)

<140> 10560303

<141> 2010-11-22

<150> PCT/US2004/018571

<151> 2004-06-14

<150> 60/543,693

<151> 2004-02-11

<150> 60/478,515

<151> 2003-06-13

<160> 120

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<210> 1

<211> 336

<212> DNA

<213> E. coli

<400> 1

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gaagttgttt tatccggtca ggaacgtgat ggcgtagcgt tagctgatca ggtaaaaagt 240
atcgctggc gggcaagagg agcaacgaag aaaggaacag ttgccccaga ggaattacaa 300
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<210> 2

<211> 111

<212> PRT

<213> E. coli

<400> 2

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Phe Asp Pro Thr Lys Gly Ser Glu Gln Ala Gly His Arg Pro Ala Val
      20             25             30
Val Leu Ser Pro Phe Met Tyr Asn Asn Lys Thr Gly Met Cys Leu Cys
      35             40             45
Val Pro Cys Thr Thr Gln Ser Lys Gly Tyr Pro Phe Glu Val Val Leu
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50		55		60
Ser Gly Gln Glu Arg Asp Gly Val Ala Leu Ala Asp Gln Val Lys Ser				
65		70		75
Ile Ala Trp Arg Ala Arg Gly Ala Thr Lys Lys Gly Thr Val Ala Pro				
	85		90	95
Glu Glu Leu Gln Leu Ile Lys Ala Lys Ile Asn Val Leu Ile Gly				
	100		105	110

<210> 3
 <211> 333
 <212> DNA
 <213> E. coli

<400> 3
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 gttgttgtgc ccgtaaccag cggaggcaat tttgcccgca ctgccggctt tgcgggtgtcg 180
 ttggatggtg ttggcatacg taccacaggt gttgtacgtt gcgatcaacc ccggacaatt 240
 gatatgaaag cacggggcgg aaaacgactc gaacgggttc cggagactat catgaacgaa 300
 gttcttggcc gcctgtccac tattctgact tga 333

<210> 4
 <211> 110
 <212> PRT
 <213> E. coli

<400> 4
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His Glu Gln Gln Gly Thr Arg Pro Val Leu Ile Val Thr Pro Ala Ala
20 25 30
Phe Asn Arg Val Thr Arg Leu Pro Val Val Val Pro Val Thr Ser Gly
35 40 45
Gly Asn Phe Ala Arg Thr Ala Gly Phe Ala Val Ser Leu Asp Gly Val
50 55 60
Gly Ile Arg Thr Thr Gly Val Val Arg Cys Asp Gln Pro Arg Thr Ile
65 70 75 80
Asp Met Lys Ala Arg Gly Gly Lys Arg Leu Glu Arg Val Pro Glu Thr
85 90 95
Ile Met Asn Glu Val Leu Gly Arg Leu Ser Thr Ile Leu Thr
100 105 110

<210> 5
 <211> 249
 <212> DNA
 <213> E. coli

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 ttaatgcagg cgctcaatct gaattattgat gatgaagtga agattgacct ggtggatggc 120

aaattaatta ttgagccagt gcgtaaagag cccgtattta cgcttgctga actgggtcaac 180
gacatcacgc cggaaaacct ccacgagaat atcgactggg gagagccgaa agataaggaa 240
gtctggttaa 249

<210> 6
<211> 82
<212> PRT
<213> E. coli

<400> 6
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1 5 10 15
Ile Pro Ala Thr Leu Met Gln Ala Leu Asn Leu Asn Ile Asp Asp Glu
20 25 30
Val Lys Ile Asp Leu Val Asp Gly Lys Leu Ile Ile Glu Pro Val Arg
35 40 45
Lys Glu Pro Val Phe Thr Leu Ala Glu Leu Val Asn Asp Ile Thr Pro
50 55 60
Glu Asn Leu His Glu Asn Ile Asp Trp Gly Glu Pro Lys Asp Lys Glu
65 70 75 80
Val Trp

<210> 7
<211> 258
<212> DNA
<213> E. coli

<400> 7
atgcatacca cccgactgaa gaggggttggc ggctcagtta tgctgaccgt cccaccggca 60
ctgctgaatg cgctgtctct gggcacagat aatgaagttg gcatgggtcat tgataatggc 120
cggctgattg ttgagccgta cagacgcccg caatattcac tggctgagct actggcacag 180
tgtgatccga atgctgaaat atcagctgaa gaacgagaat ggctggatgc accggcgact 240
ggtcaggagg aaatctga 258

<210> 8
<211> 85
<212> PRT
<213> E. coli

<400> 8
Met His Thr Thr Arg Leu Lys Arg Val Gly Gly Ser Val Met Leu Thr
1 5 10 15
Val Pro Pro Ala Leu Leu Asn Ala Leu Ser Leu Gly Thr Asp Asn Glu
20 25 30
Val Gly Met Val Ile Asp Asn Gly Arg Leu Ile Val Glu Pro Tyr Arg
35 40 45
Arg Pro Gln Tyr Ser Leu Ala Glu Leu Leu Ala Gln Cys Asp Pro Asn
50 55 60
Ala Glu Ile Ser Ala Glu Glu Arg Glu Trp Leu Asp Ala Pro Ala Thr
65 70 75 80
Gly Gln Glu Glu Ile
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<210> 9
 <211> 24
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> T54 to K77 fragment of E. coli MazE

 <400> 9
 Thr Leu Ala Glu Leu Val Asn Asp Ile Thr Pro Glu Asn Leu His Glu
 1 5 10 15
 Asn Ile Asp Trp Gly Glu Pro Lys
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<210> 10
 <211> 18
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> N60 to K77 fragment of E. coli MazE

<400> 10
 Asn Asp Ile Thr Pro Glu Asn Leu His Glu Asn Ile Asp Trp Gly Glu
 1 5 10 15
 Pro Lys

<210> 11
 <211> 30
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> synthetic RNA substrate

<400> 11
 uaagaaggag auauacauau gaaucaaauc 30

<210> 12
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> single stranded oligonucleotide

<400> 12
 gctcgtatct acaatgtaga ttgatatata ctgtatctac atatgatagc 50

<210> 13
 <211> 50

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> single stranded oligonucleotide

 <400> 13
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 <210> 14
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> synthetic oligonucleotide

 <400> 14
 agatctcgat cccgcaaatt aat 23

 <210> 15
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DNA primer

 <400> 15
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 <210> 16
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DNA primer

 <400> 16
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 <210> 17
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DNA primer

 <400> 17
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 <210> 18
 <211> 24

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> DNA primer

 <400> 18
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 <210> 19
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DNA primer

 <400> 19
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 <210> 20
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DNA primer

 <400> 20
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 <210> 21
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DNA primer

 <400> 21
 ttgccagact tcttcattg ttctgag 27

 <210> 22
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> DNA primer

 <400> 22
 gatccccaca atgcggtgac gagt 24

 <210> 23
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA primer

<400> 23
 cacgttggtcc actttgttca ccgc 24

<210> 24
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA primer

<400> 24
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<210> 25
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> DNA primer

<400> 25
 gcgttcgtcg tcggcccaac cgga 24

<210> 26
 <211> 30
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> antisense RNA

<400> 26
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<210> 27
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> complementary DNA

<400> 27
 gatttgattc atatgtatat ctctttctta 30

<210> 28
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>

<223> DNA primer	
<400> 28	
agaatgtgcg ccatttttca ct	22
<210> 29	
<211> 9	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> DNA fragment from pCold I vector	
<400> 29	
taatacacc	9
<210> 30	
<211> 15	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic oligonucleotide	
<400> 30	
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<210> 31	
<211> 18	
<212> DNA	
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<223> DNA fragment from pCold I vector	
<400> 31	
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<210> 32	
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<212> DNA	
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<223> DNA fragment from pCold I vector	
<400> 32	
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<210> 33	
<211> 60	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> multiple cloning site	

<400> 33
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<210> 34
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 34
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<210> 35
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 35
ctcaatgatc acaggagata c 21

<210> 36
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 36
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<210> 37
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 37
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<210> 38
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA primer

<400> 38

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23

<210> 39

<211> 330

<212> DNA

<213> *Bacillus halodurans*

<400> 39

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gaccaagccg ggacacgacc ggctattggt ttgtccccta aattatTTaa taaaaacaca 120
ggTTTTgcg tggTTgtcc aattaccaga caacaaaag gttatccttt tgaaatagaa 180
ataccaccg ggttacctat tgaaggggtt attcttactg accaagtaa aagtctggat 240
tggagagcaa gaaactttca cattaagga caagcaccag aggaaactgt tactgattgt 300
ttacaactta ttcatacatt tttatcttaa 330

<210> 40

<211> 363

<212> DNA

<213> *Staphylococcus epidermidis*

<400> 40

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gtaattgtag ctgcgattac tgatgggatt aataaagcga aaataccaac ccacgtagaa 180
attgaaaaga aaaagtataa attagacaaa gattcagtta ttcttcttga acaaattaga 240
acactagata aaaagcgttt aaaagaaaaa ttaacatttt tatcagagag taaaatgata 300
gaggttgata atgccttaga tattagtttg ggattaaata actttgatca tcataaatct 360
taa 363

<210> 41

<211> 411

<212> DNA

<213> *Staphylococcus aureus*

<400> 41

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gttattgttg cggcaataac tggtaggatt aataaagcga aaataccgac acatgtagag 180
attgaaaaga aaaagtataa gttggataaa gactcagtta tattattaga acaaattcgt 240
acacttgata aaaaacgatt gaaagaaaaa ctgacgtact tatccgatga taaaatgaaa 300
gaagtagata atgcactaat gattagttta gggctgaatg cagtagctca accagaaaaa 360
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<210> 42

<211> 351

<212> DNA

<213> *Bacillus subtilis*

<400> 42

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actgctattg ttgcagccat aacagcacia atacagaaag cgaaattacc aaccacgtc 180
gaaatcgatg caaaacgcta cggTTTTgaa agagattccg ttattttgct ggagcaaatt 240
cggacgattg acaagcaaag gttaacggat aagattactc atctggatga tgaaatgatg 300
gataaggttg atgaagcctt acaaatcagt ttggcactca ttgattTTta g 351

<210> 43
<211> 324
<212> DNA
<213> *Neisseria meningitides*

<400> 43
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gaaatcaaaa agacacgtcc ttgtgtcgta gtctctcctc ctgaaataca caactatctc 120
aagactgtgc tgatcgttcc catgacgagc ggaagccgtc ctgccccgtt ccgcgtcaat 180
gtccgcctttc aggataaaga cggtttgctt ttgcccgaac agattagggc tgtggataaa 240
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gtattgcagg agatgtttgc ctga 324

<210> 44
<211> 366
<212> DNA
<213> *Morganella morganii*

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ccggctgctt ttaaccgcgt gacccgcctg cctgttggtg tgcccgtagc cagcggaggt 180
aattttgccc gcacagcagg ctttgcgtgtg tcgcttgacc gcgccggcat acgtaccacc 240
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acctga 366

<210> 45
<211> 321
<212> DNA
<213> *Mycobacterium tuberculosis*

<400> 45
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accgtggtgc cgacgtcgac aagcgcccaa cctgcgggtt tccgaccaga gctggaagtc 180
atgggaacaa agacacgggt cctggtggat cagatccgga cgatcggcat cgtctatgtg 240
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<210> 46
<211> 109
<212> PRT
<213> *Bacillus halodurans*

<400> 46
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20 25 30
Pro Lys Leu Phe Asn Lys Asn Thr Gly Phe Ala Val Val Cys Pro Ile
35 40 45
Thr Arg Gln Gln Lys Gly Tyr Pro Phe Glu Ile Glu Ile Pro Pro Gly
50 55 60
Leu Pro Ile Glu Gly Val Ile Leu Thr Asp Gln Val Lys Ser Leu Asp
65 70 75 80

Trp Arg Ala Arg Asn Phe His Ile Lys Gly Gln Ala Pro Glu Glu Thr
85 90 95
Val Thr Asp Cys Leu Gln Leu Ile His Thr Phe Leu Ser
100 105

<210> 47
<211> 120
<212> PRT
<213> *Staphylococcus epidermidis*

<400> 47
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Gly Ser Glu Gln Gly Gly Val Arg Pro Val Val Ile Ile Gln Asn Asp
20 25 30
Thr Gly Asn Lys Tyr Ser Pro Thr Val Ile Val Ala Ala Ile Thr Asp
35 40 45
Gly Ile Asn Lys Ala Lys Ile Pro Thr His Val Glu Ile Glu Lys Lys
50 55 60
Lys Tyr Lys Leu Asp Lys Asp Ser Val Ile Leu Leu Glu Gln Ile Arg
65 70 75 80
Thr Leu Asp Lys Lys Arg Leu Lys Glu Lys Leu Thr Phe Leu Ser Glu
85 90 95
Ser Lys Met Ile Glu Val Asp Asn Ala Leu Asp Ile Ser Leu Gly Leu
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Asn Asn Phe Asp His His Lys Ser
115 120

<210> 48
<211> 136
<212> PRT
<213> *Staphylococcus aureus*

<400> 48
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Gly Ser Glu Gln Gly Gly Val Arg Pro Val Val Ile Ile Gln Asn Asp
20 25 30
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35 40 45
Arg Ile Asn Lys Ala Lys Ile Pro Thr His Val Glu Ile Glu Lys Lys
50 55 60
Lys Tyr Lys Leu Asp Lys Asp Ser Val Ile Leu Leu Glu Gln Ile Arg
65 70 75 80
Thr Leu Asp Lys Lys Arg Leu Lys Glu Lys Leu Thr Tyr Leu Ser Asp
85 90 95
Asp Lys Met Lys Glu Va